SCHOOL OF ENGINEERING AND TECHNOLOGY

COURSEWORK FOR THE BSC (Hons) IS (BUSINESS ANALYTICS); YEAR 3

ACADEMIC SESSION: MARCH 2021; SEMESTER 8 & 9

IST 3244: ADVANCED BUSINESS ANALYTICS DEADLINE: 9 JULY 2021

STUDENTNAME: _____

NRIC/PASSPORT NO: _____

ASSIGNMENT:

INSTRUCTIONS TO CANDIDATES

This is a group assignment that covers 70% of your final coursework marks.

IMPORTANT

The University requires students to adhere to submission deadlines for any form of assessment. Penalties are applied in relation to unauthorized late submission of work.

- Coursework submitted after the deadline but within 1 week will be accepted for a maximum mark of 50%.
- Work handed in following the extension of 1 week after the original deadline will be regarded as a non-submission and marked zero.

Lecturer's Remark (Use additional sheet if required)

I..... (Name) .....std. ID received the assignment and read the

comments..... (Signature/date)

Academic Honesty Acknowledgement

"I .....(student name). verify that this paper contains entirely my own work. I have not consulted with any outside person or materials other than what was specified (an interviewee, for example) in the assignment or the syllabus requirements. Further, I have not copied or inadvertently copied ideas, sentences, or paragraphs from another student. I realize the penalties *(refer to page 16,*

…..... (Student's signature / Date)

Assignment Advanced Business Analytics IST 3244

MARCH 2021 semester

This assignment will allow you to apply your skills in data analytics on a chosen industry which allows you to practice the scientific methods for rigorous testing and documentation. The assignment consists of the applied, "hands-on" development of a prediction model for real-world data and the scientific documentation of your approach. Student should analyse the real-world problem, and critically propose a solution through the use of analytics. You will apply the analytics techniques studied in your degree by building a predictive model. Second, you will document, explain and justify your methodology, experiments, and do a comparison of different model with proper in-depth research justification on the techniques and algorithm differentiation. You would also need to visualize the data using any visualization tools available to present your final results (if this is needed). A term paper must be produced and this would include relevant graphs and tables and it should not exceed 25 pages. You are required to complete the task in a group of 4 students. You need to make use of the scientific literature and conduct and document your experiments with the data. Document down all the stages of modelling process, gathering, cleaning and pre-processing and model selection.

Break down of Tasks by phases:

Phase 1 :Submit a Proposal. Explain why you selected this domain research, list down your problem statements, research questions, research objectives, and the outcome of research. **Due 18th June 2021**

Phase 2: Propose and justify your solution covering the following aspects:

a) Which techniques/algorithm approach are appropriate?
b) Why these techniques/ algorithm approaches are appropriate?
c) Any previous solutions that are successful/comparable?
d) What would be your proposed solutions?

Phase 3: Evaluate your solution and suggest:

a) Is your solutions better than the previous solutions based on literature reviews?
b) What may be the constraints or limitations?
c) What are alternatives that may reduce or minimize the constraints and limitations.

Phase 4: Record your presentation on a video.

Due Date: **9th July 2021 (FRIDAY)**

Submission channel: e-Learn
Items to submit: Report and a Video
Format: Essay Report
Configuration: Times New Roman, 1.5 lines spacing font size 12
Length: 12,500 words +/- 10%
Turnitin: not more than 20%
Referencing: APA or IEEE

Marking Criteria

Criteria (10 marks)	Stage	Contribution Assessment
Industry Knowledge Justification	2	Report 45%
Understanding Data	2	
Research Methodology	2	
Methods of Modelling	2	
Literature Review and References	2	
Evaluation Solution by Comparison of Model	3	
Discussion of New Findings	3	
Proposal	1	Proposal 5%
Visualization	4	Video 15%
Presentation	4	
Active Participation	Throughout the progress work	Peer Evaluation 5%
Analysis of group process and individual role within it		

Marking Rubrics

Proposal:

Criteria	Excellent (10-7)	Competent (6-4)	Poor (3-0)
Proposal	Problem statements, research questions and research objectives are clear and a draft of a good plan for research is presented.	Problem statements, research questions and research objectives are clear, but research plan is not or vice versa.	Problem statements, research questions and research objectives are confusing and is not tied to research planning.
Total 5 %			

Report:

Criteria	Excellent (10-7)	Competent (6-4)	Poor (3-0)
Industry Knowledge Justification	Deep and logical connection between research and concept directions developed	Some connections to research conducted, but other important findings are not addressed	Little or no connection to the research conducted
Understanding Data	The information is accurate; sources are legitimate; appropriate 'reading' of the situations observed or information collected	Information is mostly accurate; 'reading' of one situation may be questionable; sources good but not varied enough	Information is unreliable and/or inaccurate; situations observed don't provide valid data
Research Methodology	Documents process, explains ideas well,	Document is coherent for the most part, but	Document lacks coherence and is

	clear introduction and conclusion, obvious transitions, doesn't use jargon, demonstrates knowledge of key points	missing 1 or 2 important elements	missing 3 or more important elements
Methods of Modelling	1) Alternatives explore different facets of use 2) form evokes appropriate meanings 3) scenarios cover several dimensions of use	2 of 3 components are addressed such as: Alternatives explore different facets of use and form evokes appropriate meanings but scenarios are weak	1 of 3 components are addressed such as: Alternatives explore different facets of use but form evokes inappropriate meanings and scenarios don't seem to connect to realistic use
Literature Review and References	Literature review discussion and problem questions enhance one another with proper reference citations.	Some components relate and others do not, acceptable reference citations.	Literature review discussion feel as though different people produced them without proper compilation and missing some reference citation or poorly done.
Evaluation Solution by Comparison of Model	Used systematic testing to validate or drive refinement	Used very informal feedback to drive refinement	No testing or feedback
Discussion of New Findings	1) The research process summarizes needs and opportunity areas 2) highlights key findings 3) Many insightful implications are drawn from the data	Good report but few insightful implications or vice-versa	Poor report and few implications
Total 45%			

Visualization and Presentation (Video):

Criteria	Excellent (10-7)	Competent (6-4)	Poor (3-0)
Visualization	An effective summary of the team's efforts and works visually. Effective slides with coherent and logical	An effective summary of the team's efforts and doesn't work visually or vice versa.	Not an effective summary and does not work visually. Slides interfere with the story.

	progression, covers all key points, slides clearly aid the speaker in telling a coherent story.	For the most part slides are helpful in telling the story with only a few glaring problems.	
Presentation	Presentation is polished, speakers use sentences, enunciates well, maintains an effective pace and eye contact, doesn't run over allotted time.	Presentation is polished, for the most part, but missing 1 or 2 important elements.	Presentation is not polished.
Total 15%			

Peer Evaluation

Criteria	**Excellent (10-7)**	**Competent (6-4)**	**Poor (3-0)**
Active participation	Active participation in projects, assignments, attendance/discussions, and critiques	Some participation	Little participation
Analysis of group process and individual role within it	Clearly articulates what worked well and why, what did not work well and why, and ways to increase effectiveness and efficiency of group process in the future, considering self as well as others	Discusses only two of the three; discusses group without discussing self; discusses self without discussing group	Does not articulate any of the three – what worked well and why, what didn't work well and why, how to improve

Based on above rubric to evaluate the group members **(5%)**
Name of Evaluator:

Member Name	Active Participation	Analysis of group process and individual role within it
1.		
2.		
3.		
4.		